

**Amendments to the Specification:**

Please replace the paragraph beginning at page 3, line 8, with the following amended paragraph:

In the above constitution, it is preferable that the area of the mask be formed to be at most 35% of the area of substrate in case of doping with the acceleration voltage of at least 80kV and the current density at least ~~540 $\mu$ A/cm<sup>2</sup>~~ 540 $\mu$ A/cm, however, it is preferable that the area of mask be formed to be at most 40% in case of doping with the current density of ~~450 $\mu$ A/cm<sup>2</sup>~~ 450 $\mu$ A/cm.

Please replace the paragraph beginning at page 3, line 13, with the following amended paragraph:

In the above constitution, it is preferable that the area of mask be at most 40% in case of doping with the acceleration voltage of 80kV and the current density of at most ~~450 $\mu$ A/cm<sup>2</sup>~~ 450 $\mu$ A/cm

Please replace the paragraph beginning at page 8, line 15, with the following amended paragraph:

Firstly, the measurement of the pressure inside a treatment chamber (a doping chamber) during ion implantation gives the results that the pressure inside the treatment chamber is decreased according to decreasing the resist area proportion (%) as shown in FIG. 1 (especially at the first scanning). FIG. 1 shows that the pressure is measured from the first to the fourth scanning in case of implanting ions under the conditions of current density of ~~540 $\mu$ A/cm<sup>2</sup>~~ 540 $\mu$ A/cm and ~~450 $\mu$ A/cm<sup>2</sup>~~ 450 $\mu$ A/cm.

Please replace the paragraph bridging pages 8 and 9 with the following amended paragraph:

Secondly, the maximum value at every scanning during ion implantation is measured. In addition, the stability of ion implantation during doping can be evaluated from the variation of the maximum value of current density. Similarly, the maximum value of the current density in every condition is measured by changing the resist area required. FIG. 2 shows the results. In addition, in any case of each current density (~~540 $\mu$ A/cm<sup>2</sup>~~ 540 $\mu$ A/cm and ~~450 $\mu$ A/cm<sup>2</sup>~~ 450 $\mu$ A/cm), the measurement shows the result that values between objective current density (~~540 $\mu$ A/cm<sup>2</sup>~~ 540 $\mu$ A/cm and ~~450 $\mu$ A/cm<sup>2</sup>~~ 450 $\mu$ A/cm) and actual maximum value of current density (especially, at the ~~[[fits]]~~ first scanning) are varied widely according to decreasing the resist area proportions (%). As shown in FIG. 2, ions are implanted in both cases of current density of ~~540 $\mu$ A/cm<sup>2</sup>~~ 540 $\mu$ A/cm and ~~450 $\mu$ A/cm<sup>2</sup>~~ 450 $\mu$ A/cm, and the maximum values of current density from the first to the fourth scanning are measured.

Please replace the paragraph beginning at page 9, line 8, with the following amended paragraph:

It is preferable that the variation of current density (maximum value) during doping be generally within 20%, so that it is preferable that the resist area proportions be at most 35% in case of acceleration voltage of 80kV and current density of ~~540 $\mu$ A/cm<sup>2</sup>~~ 540 $\mu$ A/cm. Further, in case of acceleration voltage of 80kV and current density of ~~450 $\mu$ A/cm<sup>2</sup>~~ 450 $\mu$ A/cm, it is preferable that the resist area proportions be at most 40%. Therefore, it is necessary that the resist area proportions are further reduced in such case that doping is carried out at high current density ~~[[since]]~~ which makes resist be susceptible to be degassed. In addition, it is preferable that the resist

area proportions be within 15% in case that the resist is not heated after forming the resist.

**Amendments to the Drawings:**

The attached sheets of drawings includes changes to Figs. 1, 2, and 4. As described in detail below, Fig. 1 has been amended to correct "PROPOTION" to --PROPORTION--, Fig. 2 has been amended to correct "PROPOTION" to --PROPORTION--, and Figure 4 has been amended to correct "DENCITY" TO --DENSITY--. The attached sheets, which include Figs. 1, 2, and 4, replace the original sheets including Figs. 1, 2, and 4.

Attachment: Replacement Sheets